

## **REMARKS**

The issues outstanding in the office action of August 3, 2010, are the two rejections under 35 U.S.C. 103. Reconsideration of these issues, in view of the following discussion, is respectfully requested. It is noted that claim 32 has been amended to add inadvertently omitted text.

Claims 1, 4-7, 10-13, 15-17, 22-25 and 27-32 have been rejected under 35 U.S.C. 103 over Bothe '630 taken with EP '990 (Hope) and Tanaka '838. Reconsideration of this rejection is respectfully requested.

As admitted at page 3 of the office action, Bothe teaches a metalizable multi-layer film comprising a base layer of polypropylene, a first polyolefinic facing layer and a second polyolefinic facing layer. The metal layer can be laminated with a polyethylene film, as disclosed at col. 5, lines 59-60, but does not teach adhesive layers comprising the claimed adhesive composition, between the foil and polypropylene or between polyester and polypropylene. Indeed, although page 3 of the office action alleges that the patent teaches a "polyolefin adhesive layer", it is not seen that patentees characterize any layer therein as an "adhesive" and, moreover, teach that adhesion of the metalized film is caused by corona discharge treatment. See, for example, col. 5, lines 28-38. In particular, it is clear, as apparently admitted in the office action, that Bothe fails to disclose a tie layer which is a blend of metallocene polyethylene and a polypropylene homopolymer or copolymer, which are both "cografted" by an unsaturated carboxylic acid or functional derivative thereof as grafting monomer, and further a LLDPE.

However, in order to remedy this deficiency, the office action recites Hope teaching a "polyolefin-containing adhesive blend." Hope teaches, however, that the adhesives therein are useable to adhere bonding polypropylene to a polar material such as nylon or an ethylene vinyl alcohol copolymer. See page 3, lines 1-3. It is argued, at page 4 of the office action, that it would have been obvious to use Hope's adhesive "because said adhesive has excellent adhesion between polyolefin and polar substrates." However, such polar substrates are unrelated to the metalized layer as in Bothe or, for that matter the present invention. Bothe discloses metal layers of aluminum, zinc, gold or silver or alloys thereof, deposited by electroplating, sputtering or vacuum vapor deposition. See col. 5, lines 18-25. Thus, any disclosure of adhesion in Hope, between ethylene vinyl alcohol and polypropylene, employing polyolefin-containing compositions (see example 1 of Hope) is simply irrelevant to a reference such as Bothe containing a metalized layer. One of ordinary skill in the art

could not base any conclusions on the ability of the polyolefins of Hope in order to increase adhesion of the metalized layer in Bothe.

The office action at page 4 further employs Tanaka to teach a specific adhesive composition in which modified polypropylene grafted with carboxylic acid is employed as an adhesive (in combination with metallocene catalyzed polyethylene). However, Tanaka does not remedy the above-noted deficiencies. If one of ordinary skill in the art were to combine the materials of Tanaka with the adhesives of Hope, there would remain no motivation to employ these materials with a metallic layer such as that of Bothe. In Hope, adhesion in the multilayered structures is not qualified, that is, it appears that adhesion is the goal and the greater the adhesion, the more successful the adhesive. See table 1 of Hope, listing average peel strength. The examples of Hope disclose the production of films, and of containers from the film, in which it is indicated that visible delamination is to be avoided. See, e.g., examples 10 and 11. In Bothe, however, the metalized films must maintain visually pleasing appearance at high gloss. See col. 1, lines 62-64. Thus, even the combination of Hope and Tanaka does not provide motivation to one of ordinary skill in the art to employ the adhesive in such a combination in the primary reference, as the skilled artisan would not have a reasonable expectation that the gloss characteristics needed in Bothe would be maintained if additional/different adhesive is used. This is *particularly* important with respect to claim 31, reciting a package containing a multilayer film, wherein the package is openable in the welding band without delamination of the layers. One of ordinary skill simply would not know if such properties could be achieved with the adhesive resulting from the combination of Hope and Tanaka.

In addition, Tanaka contains a variety of deficiencies which, even if it were combined with Hope and Bothe, would not result in the adhesive presently claimed. Although the office action states, at page 4, that Tanaka discloses polyolefins which may be “metallocene catalyzed polyethylene (see examples)” it is not seen that the examples in fact disclose a metallocene catalyst. Indeed, at page 5 of the office action, the action appears to retrench and admit that Tanaka does not teach polymers polymerized with a metallocene catalyst. The office action argues, however, that “it is generally known in the art that metallocene catalysts result in compositions with more uniform compositions and better properties.” No basis is given for this assertion, and it is submitted that, where the PTO seeks to rely on the chemical theory in establishing obviousness, evidence of such theory must be provided. *In re Gross*, 593 F.2d 1161, 201 U.S.P.Q. 57 (C.C.P.A. 1979). Indeed, it will be recalled that, in a prior

office action, it was attempted to provide such a link with a reference directed to golf balls, indicating that the metallocene catalyst proved the properties thereof. Inasmuch as that reference is no longer employed in the rejection, it appears that it is agreed with applicant's prior argument that any improvement in golf balls taught from the use of metallocene catalysts would not be transferable to the highly different films and laminating products of references such as Tanaka. It is thus again maintained that the use of metallocene polymer, produced with a metallocene catalyst, is not suggested by the references.

Moreover, it is again maintained that the present polymers (C1) and (C2), which are cografted with carboxylic acids, are not suggested by the references. The office action continues to argue that "co-grafted" is a method limitation that does not distinguish the present claims from the prior art because cografting would not result in a patentably different product from separately grafted monomers. Applicants maintain their disagreement with this assertion.

A cografted blend of polypropylene and polyethylene would in fact be expected to be different from separately grafted polypropylene and polyethylene, as the adhesion characteristics of the resultant combination would be different depending on the grafting method. In order to provide further evidence that cografted materials of the invention are not only different in nature, but are further unexpectedly advantageous, applicants previously provided a Declaration Under 37 C.F.R. 1.132. In the present patent application itself, one experiment of grafting has been disclosed. This example uses the following products: metallocene polyethylene (mPE)  $d=0,902$  and PP homopolymer of Melt Index=7 (used as PP(B) in the examples of the present application). The declaration provides 3 additional grafting experiments to obtain 3 different grafted polymers (A):

GRAFT 1: mPE grafted by maleic anhydride – not part of the invention.

GRAFT 2: PP grafted by maleic anhydride – not part of the invention.

GRAFT 3: (PP+ mPE) *cografted* by maleic anhydride – representing the invention

In the tests, applicants have prepared 4 blends:

Blend 1: 60%wt Graft1 + 40%wt mPE2

Blend 2: 60%wt Graft2 + 40%wt mPE2

Blend 3: 60%wt Graft3 + 40%wt mPE2

Blend 4: 48%wt Graft1 + 12%wt Graft2 + 40%wt mPE2

Each is used to produce films.

The results in the 132 declaration show that sample 1 comprising grafted mPE have excellent adhesion in the metalized PP film but the haze is high. Sample 2 with grafted PP are very transparent (low haze) but the adhesion is poor. Sample 4 which comprise a mixture of both grafted PP and grafted mPE show quite high adhesion but the haze is still high. The composition of the invention, Sample 3, which comprises cografted PP and PE shows unexpectedly a haze similar to the haze of grafted PP and an excellent adhesion, even better than the adhesion obtained with the blend of the grafted PP and grafted PE. The transparency is directly related to the gloss effect of the film: the low haze of the tie layer of the invention allows to obtain a very glossy metalized film, with excellent adhesion. This was unexpected from the prior art.

However, the office action argues that the “single example” in the declaration does not demonstrate unexpected results of the entire claim scope. Applicants respectfully disagree. First, more than a single example is provided. In fact, four blends employing different grafts are tested. The prior office action has argued that there would be no difference whether monomers are grafted separately, or cografted. The declaration has shown, for at least the blend produced therein, that this assumption is untrue. Thus, the assertion and assumption in the office action has been clearly rebutted by an actual data point, an established fact. When presented with evidence of unexpected results, it is evident that it is necessary to *start over* in determining obviousness. See *In re Rinehart*, 531 F.3d 1048, 189 USPQ 143 (CCPA 1976). It is thus respectfully submitted that the data does establish that the use of cografted polymers (C1) and (C2) is not suggested by the reference. Withdrawal of the rejection is appropriate, and respectfully requested.

Claims 8 and 18-20 have been rejected under 35 U.S.C. 103 over Bothe, Hope, Tanaka and Moore ‘160. Reconsideration of this rejection is also respectfully requested. The considerable deficiencies of Bothe, Hope and Tanaka have been discussed above. Moore, cited solely for its teaching of biaxially polypropylene films does nothing to remedy the above deficiencies, and thus it is submitted that this rejection should also be withdrawn for the reasons discussed above.

The claims of the application are submitted to be in condition for allowance, and passage to issue is respectfully requested. However, should the Examiner have any questions or comments, he is cordially invited to telephone the undersigned at the number below.

Respectfully submitted,

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